

REMARKS

The claims are 1, 6, 8, 10, 11-15, 20, 22 and 24-30, with claims 1 and 15 being independent. Claims 6, 10-14, 20 and 24-28 have been amended as to form. Claims 5, 7, 9, 19, 21 and 23 have been cancelled and their subject matter added, respectively, to independent claims 1 and 15.

Claims 1, 5, 10, 15, 19, 24, 29 and 30 were provisionally rejected as an obviousness-type double patenting over claims 1, 2, 5-8, 39, 41, 42 and 44 of Application No. 10/776,173 ('173 application). The rejection is respectfully traversed.

The Examiner has recognized that there were specific claimed differences between the present claims and the claims of the copending '173 application. Independent claims 1 and 15 of the subject application have now been amended to include the features of claims 7 and 9 (or 21 and 23) which claims were not subject to the double patenting rejection. Accordingly, the rejection having been met, should be withdrawn.

Claims 1, 15 and 29-30 were rejected over Ikeda, JP '784 in view of Tanimura, JP '177 or Chiba, JP '174. Claims 5-14 and 19-28 were rejected as obvious over the same combination of references further in view of Kanai '257. The Examiner has argued that the present claims do not require a heater, per se, only something that can cause heating while inducing a chemical reaction. The Examiner argues that plasmas inherently cause some heating and are not necessarily excluded from the claimed invention. The grounds of rejection are respectfully traversed.

Initially, the claims have been amended to provide that the chemical reaction of the unreacted gas or by-product exhausted from the processing space is caused by heat from a chemical-reaction inducing means which is a first heating element

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comprising metal member connected to a power source. Accordingly, the chemical reaction is caused by the heating element and not, for example, by a plasma. Support for the amendment is found, inter alia, on page 11, line 25 to page 12, line 3 and page 16, lines 2-10, wherein it is disclosed that chemical reaction of the unreacted gases or by-products is caused by heating employing a heating element.

In the present claimed invention a second metal member acts as a plasma blocking means and is spaced in an exhaust line between the processing space and the heating element. The second metal member acts to block plasma from reaching the heating element used to process the unreacted gas or by-product gas.

In Ikeda '784, coils and baffles are employed to react with residual gases. However, Ikeda admittedly fails to teach a plasma blocking means, see Official Action of May 25, 2004, paragraph 13. Ikeda also fails to teach use of an exhaust gas processing system with a plasma CVD or plasma etching process. Only a photo or thermal CVD reaction is disclosed in Ikeda.

Accordingly, Ikeda does not deal with the problem of plasma infiltration when processing residual gases. In Ikeda there is no need for a plasma blocking means, since no plasma processing occurs. In Tanimura '175 there is no disclosure of a second metal member as a plasma blocking means spaced between the processing space and heating element to block plasma from reaching the heating element. Likewise, in Chiba '174 there is no disclosure of a second metal member (grounded or not) between the processing space and heating element to block plasma.

In Kanai '257 it is disclosed that the microwaves employed to generate plasma can leak. Accordingly, an isolation means in or near the film-forming chamber,

col. 22, lines 43-44, is employed to prevent microwave leaks. In column 13 and column 14, a metal mesh isolates the microwave applicator from the microwave plasma. This mesh is generally employed within or near the processing space. There is no specific disclosure of the mesh employed in an exhaust line to shield a chemical reaction inducing means. There is no chemical reaction inducing means in Kanai. Accordingly, there is no teaching of the spatial relationship of the microwave mesh to a heating element in an exhaust line. Further, the microwave mesh of Kanai would have no use in Ikeda since no microwave-induced plasma is employed.

Chiu '633 teaches that an exhaust treatment is conducted using a plasma means. Accordingly, in Chiu, conducting an exhaust treatment in the vicinity of a processing space without disturbing the plasma in the processing space is difficult. The plasma of the treatment means tends to interfere with the plasma in the processing space.

To the contrary, in the present claimed invention, processing of the exhaust is conducted using a heater, not a plasma. Therefore, it is possible to conduct the exhaust treatment at a position close to the processing space. In Pang '628, trapping is conducted employing a downstream plasma coating apparatus or a mechanical and/or electrostatic trapping mechanism. Accordingly, Pang does not disclose employing a heater for exhaust processing. Applicants do not understand that any of the Japanese references disclose that the chemical reaction of the unreacted gas or byproduct is caused by heating a specific metal member having a high melting point.

Wherefore, it is respectfully requested that the amendment be entered, the final rejection withdrawn, the claims allowed and that the case passed to issue.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

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